38th Annual Meeting, APS Division of Plasma Physics
11-15 November 1996, Denver, CO
Abstract Submittal Form

Deadline: Wednesday, 10 July 1996

Subject Classification Category _____ ☐ Theory ☐ Experiment
(Refer to the DPP Subject Category list on page M19.)

UCRL-JC-124653 Abs

Measurements of linear regime Rayleigh-Taylor growth rates in laser-driven planar targets,* S.G. Glendinning[a)], S.N. Dixit[a)], B.A. Hammel[a)], D.H. Kalantar[a)], M.H. Key[b,c)], J.D. Kilkenny[a)], J.P. Knauer[d)], D.M. Pennington[a)], B.A. Remington[a)], R.J. Wallace[a)], S.V. Weber[a)], a)LLNL, Livermore, CA, b)Rutherford Appleton Laboratory, UK, c)University of Oxford, UK, d)LLE, Rochester, NY. Rayleigh-Taylor (RT) growth rates in the linear regime have been measured for several wavelengths in planar CH_2 laser-driven foils, using time-resolved radiography. The foils were ablatively accelerated by direct illumination with one arm of the Nova laser at 0.53 μm wavelength and 7 x 10^{13} W/cm^2, resulting in an acceleration of about 60 μm/ns^2 Measured and LASNEX simulated RT growth rates were between 1.5 and 2.3 ns^{-1}, compared with classical growth rates of between 2.3 and 4.3 ns^{-1}. Simulations with a one-dimensional nonlocal electron transport model indicate that the LASNEX growth rates may be systematically too high at shorter wavelengths. *Work performed under the auspices of the U.S. Department of Energy by the Lawrence Livermore National Laboratory under contract number W-7405-ENG-48.

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